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12

13   UNITED STATES DISTRICT COURT

14   NORTHERN DISTRICT OF CALIFORNIA

15   SAN JOSE DIVISION

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HTC CORPORATION and HTC AMERICA, INC.,	Case No. 5:08-CV-00882 PSG
	(Related to Case No. 5:08-CV-00877 PSG)
Plaintiffs,	
	RENEWED MOTION FOR ENTRY OF JUDGMENT AS A MATTER OF LAW OF NON-INFRINGEMENT [PER FED. R. CIV. P. 50(b)]
v.	
TECHNOLOGY PROPERTIES LIMITED, PATRIOT SCIENTIFIC CORPORATION, and ALLIACENSE LIMITED,	Complaint Filed: February 8, 2008 Trial Date: September 23, 2013
Defendants.	Date: December 10, 2013 Time: 10:00 a.m. Place: Courtroom 5, 4th Floor Judge: Hon. Paul S. Grewal

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JUDGMENT AS A MATTER OF LAW
OF NON-INFRINGEMENT

1

NOTICE OF MOTION AND MOTION

2   PLEASE TAKE NOTICE that, pursuant to Federal Rule of Civil Procedure 50(b),

3 Plaintiffs HTC Corporation and HTC America, Inc. (collectively "HTC") hereby renew their

4 motion for judgment as a matter of law ("Motion"), for which the hearing is proposed to be held on

5 December 10, 2013 at 10:00 a.m.

6   In this Motion, HTC seeks the entry of judgment as a matter of law on the ground that

7 HTC does not infringe any of claims 6, 7, 9, 13, 14 or 15 of U.S. Patent No. 5,809,336 ("'336

8 patent"). This Motion is based on the Memorandum of Points and Authorities set forth below, the

9 evidence and proceedings at trial, and such other matters as may be presented and allowed by

10 the Court.[1]

11

MEMORANDUM OF POINTS AND AUTHORITIES

12   HTC is entitled to judgment as a matter of law because, based on the evidentiary record

13 at trial and the Court's claim construction, no reasonable jury could have found that HTC

14 infringes any asserted claim of the '336 patent. Prior to trial, HTC sought summary judgment

15 that none of the accused HTC products infringe the '336 patent. In ruling on the motion, the

16 Court found that the "entire oscillator" term excluded the use of any external clock to generate

17 the signal used to clock the CPU. (Dkt. No. 585 at 11:1-2; Dkt. No. 616, at 2:4-7)

18 "Nevertheless," the Court held, "there remains a factual dispute whether HTC's products contain

19 an on-chip ring oscillator that is self-generating and does not rely on an input control to

20 determine its frequency." (*Id.* at 11:2-4.) The Court found that the summary judgment record

21 presented "a classic factual question that requires a trial to answer." (*Id.* at 11:6-7.)

22   This "classic factual question," however, evaporated at trial. The trial record, including

23 testimony elicited from TPL's technical expert, established without question that in all accused

24 HTC products, an "external clock" is "used to generate the signal used to clock the CPU" –

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26

27 [1] Before the case was submitted to the jury, HTC brought a pre-verdict motion for judgment as a
matter of law pursuant to Federal Rule of Civil Procedure 50(a) on October 1, 2013. (*See* Dkt.
No. 647.)   This renewed motion is timely filed pursuant to Federal Rule of Civil

28 Procedure 50(b).

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1 precisely what this Court found was excluded from the scope of the asserted claims.   In

2 particular, TPL conceded repeatedly at trial that all of the accused HTC products included an on-

3 chip oscillator that relied on an input control to determine its frequency. Judgment as a matter of

4 law, therefore, should be entered in HTC's favor.

5 **I.   LEGAL STANDARD**

6   TPL's infringement claim against HTC at trial was based solely on literal infringement.

7 (Declaration of Kyle D. Chen in Support of Renewed Motion for Entry of Judgment as a Matter

8 of Law of Non-Infringement ("Chen Decl."), Ex. 1 (09/27/2013 Trial Tr. (Dkt. No. 643)) at

9 1012:25-1013:8.)   Literal infringement could be found only if TPL established that "every

10 limitation recited in the claim appears in the accused device, *i.e*., when the properly construed

11 claim reads on the accused device exactly." *DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314,

12 1331 (Fed. Cir. 2001) (internal quotations and citation omitted). "If any claim limitation is

13 absent from the accused device, there is no literal infringement as a matter of law." *Bayer AG v.*

14 *Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000).

15   In deciding a motion for judgment as a matter of law under Federal Rule of Civil

16 Procedure 50, a district court must draw all reasonable inferences in favor of the nonmoving

17 party and refrain from making credibility determinations or weighing the evidence. *See Reeves*

18 *v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000). Judgment as a matter of law

19 should be entered because, based on the undisputed evidence presented at trial, no reasonable

20 jury could have found that HTC literally infringes any claim of the '336 patent.

21   The question of literal infringement in this case did not turn on resolving conflicting

22 evidence or weighing credibility of witnesses – the relevant facts surrounding the operation of

23 the accused products were undisputed. Infringement instead turned on applying the undisputed

24 operation of the accused products to the claim language as construed by the Court. The Federal

25 Circuit has made it clear that in this situation – where there is no material dispute regarding the

26 operation of the accused products – the question of literal infringement is properly decided as a

27 matter of law. *See, e.g., MyMail, Ltd. v. Am. Online, Inc.*, 476 F.3d 1372, 1378 (Fed. Cir. 2007)

28 ("Because there is no dispute regarding the operation of the accused systems, that issue [of literal

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1 infringement] reduces to a question of claim interpretation and is amenable to summary

2 judgment."); *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1362 (Fed. Cir. 1999) ("Because the

3 relevant aspects of the accused device's structure and operation are undisputed in this case, the

4 question of whether [the accused product] literally infringes the asserted claims of the [patent-in-

5 suit] turns on the interpretation of those claims."); *see also Reeves*, 530 U.S. at 150 ("And the

6 standard for granting summary judgment 'mirrors' the standard for judgment as a matter of law,

7 such that 'the inquiry under each is the same.'") (quoting *Anderson v. Liberty Lobby, Inc.*, 477

8 U.S. 242, 250-51 (1986)).

9 **II.   JMOL OF NON-INFRINGEMENT SHOULD BE GRANTED TO HTC**

10   **A.   No Reasonable Jury Could Find that HTC's Products Satisfy the "Entire Oscillator" Limitation**

11

12   The Court found that the term "entire oscillator" is properly understood to exclude the

13 use of any external clock to generate the signal used to clock the CPU. (*See* Dkt. Nos. 585 at 11

14 and 616 at 2:4-7.)   Based on this construction, the Court explained that the factual dispute for

15 trial was "whether HTC's products contain an on-chip ring oscillator that is self-generating ***and***

16 ***does not rely on an input control to determine its frequency***."   (Dkt. No. 585 at 11:3-4

17 (emphasis added).)   The Court's identification of the relevant issue was consistent with the

18 intrinsic record:

19 - "[T]he Magar microprocessor clock is frequency controlled by a crystal which is also external to the microprocessor. … The Magar microprocessor in no way contemplates a

20   variable speed clock as claimed." (Dkt. No. 457-13, 7/7/1997 Amendment at 3-4 (TPL853_00002427-28).)

21

22 - "The Magar teaching is well known in the art as a conventional crystal controlled oscillator. It is specifically distinguished from the instant case in that it is both fixed-frequency (being crystal based) and requires an external crystal or external frequency

23   generator." (Dkt. No. 457-14, 2/10/1998 Amendment at 5 (TPL853_00002403).)

24 - "Even if the examiner is correct that the variable clock in Sheets is in the same integrated circuit as the microprocessor of system 100, that still does not give the claimed subject

25   matter. In Sheets, a command input is required to change the clock speed." (Dkt. No. 457-17, 1/13/1997 Amendment at 4) (TPL853_00002449).)

26

27   The testimony of TPL's technical expert, Dr. Vojin Oklobdzija, confirmed that in all

28 accused HTC products, an "external clock" is "used to generate the signal used to clock the

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1 CPU," precisely what the Court found (and the intrinsic record made clear) was excluded by the

2 claim scope. In particular, the on-chip oscillator in the HTC products "rel[ies] on an input

3 control to determine its frequency." (Dkt. Nos. 585 at 11:2-4 and 616 at 2:6-7.) Dr.

4 Oklobdzija's testimony on this issue was consistent with the testimony of every other technical

5 fact and expert witness that testified at trial.

6   As Dr. Oklobdzija acknowledged, although each accused HTC product includes either a

7 Qualcomm, Texas Instruments (TI) or Samsung chip, for purposes of his infringement analysis,

8 "they generally work the same way." (Chen Decl., Ex. 2 (09/26/2013 Trial Tr. (Dkt. No. 642)) at

9 734:16-18.) In particular, each chip includes a Phase Locked Loop (PLL) that receives input

10 from an external (off-chip) reference signal which is based on a crystal. (*Id*. at 734:19-22, 735:6-

11 19, 744:15-745:3.) This external reference signal is, according to Dr. Oklobdzija, "essential" to

12 the PLLs in all of the accused HTC products. (*Id*. at 737:17-738:2.) The external reference

13 produces a "stable" signal that "is **used** to adjust the frequency generated by the ring oscillator,

14 so it has some relationship with it." (*Id*. at 738:9-17 (emphasis added).) The purpose of the PLL,

15 in fact, is to adjust the frequency of the on-chip oscillator based on that external reference. (*Id*. at

16 746:11-18; *see also* Chen Decl., Ex. 3 (9/25/2013 Trial Tr. (Dkt. No. 641)) at 553:16-554:11.)

17 The evidence at trial confirmed that all of the Qualcomm, TI and Samsung chips at issue in this

18 case use such a PLL with an external reference signal. (*See, e.g*., Chen Decl., Ex. 4 (Trial Ex.

19 3084) at HTCTP0075742 (TCXO); Ex. 5 (Trial Ex. 3107) at QCHTCTPL0013601 (Fig. 12-1,

20 TCXO), QCHTCTPL0013600; Ex. 6 (Trial Ex. 3109) at QCHTCTPL0017373; Ex. 7 (Trial Ex.

21 3112) at QCHTCTPL0024020; Ex. 8 (Trial Ex. 3091) at HTCTPI0002154 (CLKTCXO); Ex. 9

22 (Trial Ex. 3115) at TI-0001073 (CK_REF); Ex. 10 (Trial Ex. 3100) at PIC00004245-46 (XTlpll

23 or EXTCLK.)

24   Dr. Oklobdzjia also acknowledged that the signal used to clock the CPU is determined by

25 a formula contained "in every textbook" that defines the relationship between the frequency of

26 the reference signal and the output frequency of the on-chip oscillator. (Chen Decl., Ex. 2

27 (09/26/2013 Trial Tr.) at 739:12-24, 749:4-6, 735:2-5.) The Qualcomm, TI and Samsung chips

28 all use such a formula to determine the frequency of the signal used to clock the CPU. The

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1 notation used to express this formula may differ from chip to chip, but in each case, the formula

2 expressly relies on the external clock frequency as the input control to determine the frequency

3 of the accused oscillator.   (*See*, *e.g.*, Chen Decl., Ex. 11 (Trial Ex. 3101) at

4 QCHTCTPL0007812; Ex. 7 (Trial Ex. 3112) at QCHTCTPL0024021; Ex. 9 (Trial Ex. 3115) at

5 TI-0001076; Ex. 12 (Trial Ex. 3117) at TI-0007192; Ex. 10 (Trial Ex. 3100) at PIC00004247.)

6 One example of such a formula (for a Qualcomm chip) was discussed during Dr. Oklobdzija's

7 cross-examination:

8

9 ## 5.1 Output Frequencies

10 The PLL output clock frequency is given by:

11 $$f_{CLK} = f_{TCXO} * L * 2$$

12

13 (Chen Decl., Ex. 13 (Trial Ex. 3027) at QTPL-0013892.)

14   The formula shown above states that the output frequency of the on-chip clock (f_{CLK})

15 equals the frequency of the external crystal clock (f_{TCXO}), multiplied by "L," multiplied by 2.

16 (Chen Decl., Ex. 2 (09/26/2013 Trial Tr.) at 743:5-20.) The table below, from the same page of

17 Exhibit 3027, shows that the output clock signal frequency of the PLL is based on the external

18 reference frequency (19.2 MHz) multiplied by "L" and 2. For example, for an "L" value of 10,

19 the output of the on-chip clock will equal 19.2 MHz * 2 * 10, which equals 384 MHz. (*Id*. at

20 743:21-744:17, 748:22-749:6.)

21

22 **Table 5-1 PLL output clock frequencies with 19.2 MHz reference**

Input frequency	L	PLL_L_VAL[5:0]	Output frequency (MHz)
19.2 MHz	10	001010	384.0
19.2 MHz	11	001011	422.4
19.2 MHz	12	001100	460.8
19.2 MHz	13	001101	499.2
19.2 MHz	14	001110	537.6

27

28 (Chen Decl., Ex. 13 (Trial Ex. 3027) at QTPL-0013892.) Dr. Oklobdzija admitted that a

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1   manufacturer can select the "L" value depending on what it wanted to achieve in its product.

2   (Chen Decl., Ex. 2 (09/26/2013 Trial Tr.) at 746:8-18.)

3   As this example illustrates, the external clock in the accused HTC products is

4   indisputably "used to generate the signal used to clock the CPU." This is because the frequency

5   of the on-chip oscillator (represented by the output frequency f_{clk}) is determined based on the

6   external clock input (represented, for example, by the input frequency or TCXO above) in

7   accordance with a precise mathematical formula. In this regard, the on-chip oscillator relies on

8   an input control to determine its frequency. The "external clock," simply put, is "used" to

9   generate the signal used to clock the CPU because the external clock determines the frequency of

10   that clock signal.[2]

11   The trial record is undisputed that all of the PLLs in all of the HTC accused products use

12   a formula, similar to the one above, in which the signal used to clock the CPU has a frequency

13   determined as a function of the frequency of the external clock. This was confirmed through the

14   undisputed trial testimony of Sina Dena, Baher Haroun and Thomas Gafford. (*E.g.*, Chen Decl.,

15   Ex. 14 (9/24/2013 Trial Tr. (Dkt. No. 640)) at 350:7-17, 364:22-366:1, 360:21-361:6; Ex. 1

16   (9/27/2013 Trial Tr.) at 1046:9-14.)

17   TPL did not dispute that all accused HTC products include an external clock that controls

18   the frequency of the on-chip oscillator. TPL conceded as much in closing argument, asserting

19   that the external crystal is "used to limit or regulate the speed of the clock signal that is generated

20   by the ring oscillator." (Chen Decl., Ex. 15 (10/1/2013 Trial Tr. (Dkt. No. 666)) at 1551:16-18.)

21   TPL's concession eliminated the "factual dispute" that the Court identified as requiring a trial

22   when it denied HTC's motion for summary judgment. (Dkt. No. 585 at 11:2-4.)

23   TPL's argument at trial focused on the suggestion that, for a system to be excluded from

24   the "entire oscillator" definition, the signal from the external clock had to ***directly*** clock the

25

26   _____

27   [2] Indeed, the Office of Unfair Import Investigations for the U.S. International Trade Commission
     reached the same conclusion in responding to TPL's Petition for Review of the ITC's Initial
     Determination of no infringement by HTC of the '336 Patent. *See* Request For Judicial Notice
28   filed herewith, Exhibit A at pp.6-15.

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1   CPU. In closing argument, for example, TPL argued that that the on-chip oscillator could be

2   analogized to a sports car following an RV on the road – both vehicles having their own separate

3   engines. TPL's counsel asked the rhetorical question: "But is the RV and the engine in that

4   motor home, is that used to generate the clock signal, or the engine power for the sports car?"

5   (10/1/2013 Trial Tr. at 1552:18-20.) His response: "No way. No way. The sports car has its

6   own engine, generates its own power." (*Id.* at 1552:20-21.)

7   But the language of the Court's construction, as well as the Court's reasoning, did not

8   support counsel's inapposite analogy. The signal used to clock the CPU in each of the accused

9   HTC products is undisputedly output by a PLL. That PLL output signal in every accused HTC

10   product is defined by a precise formula that always includes the frequency of the signal

11   generated by the external crystal clock. The Court's claim construction of the "entire oscillator"

12   term makes it clear that no external clock can be **used** in any way "to generate the signal used to

13   clock the CPU." The exclusion adopted by the Court does not require the external clock itself to

14   directly generate the signal that actually clocks the CPU – all that is needed is for the external

15   clock to be **used**. The "entire oscillator" limitation cannot be satisfied if an external clock is

16   **used** in any way to generate the signal used to clock the CPU – which is indisputably the

17   situation for all accused HTC products.

18   This case confirms the Federal Circuit's observation that in cases involving alleged literal

19   infringement, such as this one, the literal infringement question ultimately reduces to a legal

20   question of claim interpretation when the operation of the accused products is undisputed. *See*

21   *MyMail*, *supra*, 476 F.3d at 1378. The only "disputes" resolved by the jury involved the

22   meaning of the Court's exclusionary language and what it meant to "generate" a clock signal.

23   The jury obviously struggled with these legal issues as evidenced by the two notes it sent out

24   during its deliberations. (*See* Dkt. 656, at 15 (jury question asking for "court's definition of

25   'generate'"); *id.* at 16 (jury question asking for definition of "other parts" in Court's instruction

26   regarding legal affect of "comprising").) While it is unclear how the jury ultimately came to its

27   finding of literal infringement, the lack of any material dispute in the trial record makes it clear

28   that it did not do so by resolving evidentiary conflicts or making credibility determinations.

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                                                                JUDGMENT AS A MATTER OF LAW
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1   Because the operation of the accused HTC products was undisputed, and that operation cannot as

2   a matter of law meet the "entire oscillator" limitation required by all asserted claims, HTC is

3   entitled to judgment as a matter of law of non-infringement.

4   **B.   No Reasonable Jury Could Have Found that the Processing Frequency of the
          CPU and the "Entire Oscillator" Vary as a Function of the Fabrication or
5   Operational Parameter Variation as Required by the Claims**

6   Based on the undisputed evidence presented at trial, no reasonable jury could have found

7   that the accused HTC products meet the element of "varying the processing frequency of said

8   first plurality of electronic devices [for the CPU] and the clock rate of said second plurality of

9   electronic devices [for the "entire oscillator"] in the same way as a function of parameter

10 variation in one or more fabrication or operational parameters associated with said integrated

11 circuit substrate."   The evidence at trial established that the accused HTC products use fixed

12 speed clocks that do not vary as a function of the variation in any of the fabrication or

13 operational parameters. As Mr. Dena testified, for example, "[r]egarding PLL's, I can tell you

14 that PLL's are designed to maintain the target frequency across PVT variations." (*See* Chen

15 Decl., Ex. 1 (9/27/2013 Trial Tr.) at 1062:2-3; *see also* Ex. 14 (9/24/2013 Trial Tr.) at 359:2-8

16 (Haroun).) Using a fixed speed clock to clock the CPU was important to enable the HTC phones

17 to operate consistently across all conditions. (Chen Decl., Ex. 1 (09/27/2013 Trial Tr.) at

18 1031:9-1032:9.)

19   As explained in the previous section, based on the formulae that establish the PLL's

20 output signal frequency, the processing frequency of the CPU and the on-chip clock are a

21 function of the fixed external reference signal and other factors relating to the PLL circuitry.

22 None of the formulae for any Qualcomm, TI or Samsung chip recites any fabrication or

23 operational parameter variation as playing any role in the determination of the PLL output

24 frequency. The accused HTC products, therefore, do not meet the "varying" limitations as a

25 matter of law.

26 **III.   CONCLUSION**

27   For the foregoing reasons, HTC respectfully requests that the Court enter judgment as a

28 matter of law under Rule 50(b) in favor of HTC.

1   Dated: October 31, 2013   Respectfully submitted,

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                                                       JUDGMENT AS A MATTER OF LAW
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